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Results of the October 25, 2010, samplings of the First-Stubble (fifth sampling) and Plant-Cane (second sampling) Sugarcane Maturity Tests at the USDA-ARS Sugarcane Research Laboratory's Ardoyne Research Farm at Schriever, LA are attached. The study is designed to examine the natural ripening process and compare the results for the same harvest dates over a 5-yr period (2006 – 2010); consequently, a glyphosate-containing ripener is not applied. Samples consist of 15, hand-cut stalks of clean, trash-free and properly topped cane from each of four replications. **On a commercial farm, one can expect TRS/TC levels to be as much as 20% lower due to the additional trash in the cane associated with mechanical harvesting.** The study includes eight released Louisiana varieties: Ho 95-988, HoCP 96-540, L 97-128, L 99-226, L 99-233, HoCP 00-950, L 01-283 and L 03-371, and the candidate variety HoCP 04-838. L 01-299 is omitted from this test because its release was not expected when the test was planted in 2008. The plant-cane study includes all of the varieties in the first-Stubble test with the exception of Ho 95-988. The study also contains the experimental variety HoCP 05-961 which is a candidate for release in 2012. Harvestable sugarcane stalks in all plots were counted on July 9th. Stalk counts, stalk weights, and TRS levels are used to provide an estimation of cane (tons/A) and sugar (lbs/A) yields.

The first-Stubble test is mostly erect, with the exception of L99-226 and L99-233. However, most varieties in the plant-cane test have some degree of lodging with L99-226 and L99-233 being the worse. Since the last sampling, the farm has received 0.09 in. of rain.

First-Stubble. During the 2-week interval, no growth occurred as the period without significant rainfall continues. When compared to the previous four years, sugarcane stalks of the core varieties are average in weight, but slightly shorter for this sampling. The varieties, L 99-233 and L 99-226 had the longest stalks and HoCP 00-950 and Ho 95-988 had the shortest stalks. The variety L 99-226 had the heaviest stalks, while L 01-283 and L 99-233 had the lightest. The newly released variety, L 03-371, and the candidate for release, HoCP 04-838, are average in length and weight when compared to the averages for the core varieties.

Brix and sucrose percentages remain higher in 2010 than in the previous four years for this sampling date. The average theoretically recoverable sugar (TRS) levels for the core varieties at this sampling date are 27 lbs./ton of cane (TC) greater than those recorded in 2009. The varieties with the greatest increase in TRS levels were L 99-226 and L 99-233 with an average increase 32 lbs./TC. Of the varieties with major plantings for harvest in 2010, L 01-283, L 97-128 and HoCP 00-950 continue to have the highest TRS levels producing over 300 lbs. of sugar/TC; which is 62 lbs./TC higher than HoCP 96-540. The new variety L 03-371 produced 274 lbs./TC and the



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candidate variety HoCP 04-838 produced 280 lbs./TC which is slightly above average. Of the varieties HoCP 96-540 had the lowest TRS producing 238 lbs./TC.

Estimated cane and sugar yields of the major varieties are lower in 2010 when compared to the 2009 data at this sampling date for both tons/A and lbs/A. Of the varieties sampled, the highest cane yields were produced by L 99-226, L 99-233, and L 03-371 which yielded 45.1, 44.5, and 45.2 tons/A, respectively.. The highest estimated sugar yields were obtained by L 99-226, L 01-283, and 03-371 producing 12,929, 12,428, and 12,375 lbs./A, respectively. The candidate variety, HoCP 04-838, has cane and sugar yields that are similar to HoCP 96-540.

Plant-Cane. Stalk weights for the five core varieties (HoCP 96-540, L 97-128, L 99-233, HoCP 00-950 and L 01-283) are similar to the previous four years; but stalk lengths are slightly above average. Stalks increased in length by 6 in. and weight by 0.1 lbs during the 4-week sampling interval. Of the varieties included, L 99-226 and L 97-128 had the heaviest stalks and along with L 99-233 the longest. HoCP 00-950, L 01-283, and HoCP 04-838 had the lightest stalks. Normal juice brix, sucrose, purity and TRS levels are higher in 2010 than in 2009 for this sampling date. The average TRS of the core varieties is 22 lbs./TC higher than those recorded in 2009 and 33 lbs./TC higher than the average for the previous four years. Of the varieties included in this test, HoCP 96-540 had the lowest TRS levels (250 lbs./TC) and HoCP 00-950 the highest (293 lbs./TC) TRS. The newly released variety L 03-371 had TRS levels of 288 lbs./TC which is only 5 lbs less than HoCP 00-950. The candidate varieties HoCP 04-838 and HoCP 05-961 produced TRS levels of 270 and 286 lbs./TC, respectively.

Average cane yields for the five core varieties in the plant-cane test were 51 tons/A which is 3 tons/A more than in 2009. Average sugar yields are 13917 lbs./A which is 1794 lbs./A more than those recorded last year. Of the varieties, the highest cane yields were obtained with L 99-226 (59 tons/A) and HoCP 96-540 (56 tons/A). L 99-226 also had the highest sugar yields at 16304 lbs of sugar/A followed by L 03-371 with 15923 lbs of sugar/A.

The sixth sampling of the first-stubble maturity test is scheduled for November 8th.

Reminder. If you would like to discontinue your receipt of these reports or if you know of individuals who would like to begin receiving this information in 2011, please contact Mrs. Ashley DeHart by email (Ashley.DeHart@ars.usda.gov) Emailing insures address accuracy. Information regarding USDA research activities can also be found on our website: www.ars.usda.gov/msa/srrc/sru .

Maturity reports are prepared by Mr. Mike Duet and Dr. Ed Richard of the USDA-ARS Sugarcane Research Lab.

Maturity studies on first-stubble cane grown on mixed land at the Ardoyne Farm, USDA-ARS, Sugarcane Research Unit, Houma, LA, October 25, 2010¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield TRS (lb.)	Previous sample date ⁴ (lb.)	TRS change from previous sample (lb.)	Estimated yield ⁶	
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm3)	Bx. (%)	Su. (%)	Pu. (%)				Cane (tons/A)	Sugar (lbs/A)
HoCP 04-838	2010	2.0	100	---	---	17.89	15.30	85.57	280.0	258.3	21.7	35.0	9799
	2009	---	---	---	---	---	---	---	---	---	---	---	---
	2008	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2010	2.1	99	---	---	17.55	14.60	83.09	270.7	248.7	22.0	38.3	10328
	2009	2.4	108	---	---	16.01	13.24	82.61	243.6	210.8	32.8	50.8	12375
	2008	2.1	98	---	---	16.57	13.38	80.72	242.9	213.2	29.7	42.0	10426
	2007	1.0	100	0.78	1.19	16.35	13.46	82.32	246.2	228.4	17.8	---	---
	2006	2.1	102	0.84	1.07	17.24	14.35	83.24	264.5	218.6	45.9	---	---

¹ Data for each parameter represents the average of four replications of 15 stalks each.

² Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 15-stalksample of each rep, will be taken on the 1st, 4th and the 8th maturity study sampling dates.

³ Brix factor = .8854; Sucrose factor = .8105.

⁴ Previous scheduled sample date was October 12, 2010.

⁵ Averages are based only on varieties included in previous year's first-stubble maturity study (Ho 95,988, HoCP 96-540, L 97-128, L 99-233, and HoCP 00-950).

⁶ Estimated cane yield is the product of stalk weight and millable stalk counts, estimated sugar yield is the product of TRS and estimated cane yield.

Maturity studies on plant-cane grown on mixed land at the Ardoyne Farm, USDA-ARS, SRRRC, Sugarcane Research Unit, Houma, LA, October 26, 2010¹.

Variety	Year	Stalk ²				Normal juice ³			Sugar yield TRS (lb.)	Previous sample date ⁴ TRS (lb.)	TRS change from previous sample (lb.)	Estimated yield ⁶	
		Wt. (lb.)	Lh. (in.)	Dia. (in.)	Density (g/cm3)	Bx. (%)	Su. (%)	Pu. (%)				Cane (tons/A)	Sugar (lbs/A)
HoCP 05-961	2010	2.5	107	---	---	18.11	15.37	84.87	285.7	241.5	44.2	43.8	12512
	2009	---	---	---	---	---	---	---	---	---	---	---	---
	2008	---	---	---	---	---	---	---	---	---	---	---	---
	2007	---	---	---	---	---	---	---	---	---	---	---	---
	2006	---	---	---	---	---	---	---	---	---	---	---	---
Averages ⁵	2010	2.4	112	---	---	17.68	14.73	83.30	274.4	226.8	47.6	51.0	13917
	2009	2.5	105	---	---	16.42	13.61	82.85	252.0	208.2	43.8	48.1	12123
	2008	2.2	102	---	---	16.76	13.69	81.65	250.5	180.5	70.0	42.5	10625
	2007	2.4	107	0.84	1.21	14.56	11.06	75.91	194.5	138.1	56.4	---	---
	2006	2.4	108	0.88	1.08	17.38	14.61	84.05	269.9	213.2	56.7	---	---

¹ Data for each parameter represents the average of four replications of 15 stalks each.

² Stalk diameter and density based on a subsample consisting of 8 randomly selected stalks from the 10-stalk sample of each rep, will be taken on the 1st & 3rd plant-cane maturity study sampling.

³ Brix factor =0.8854; Sucrose factor = 0.8105.

⁴ Previous sample date, September 27, 2010 .

⁵ Averages are based only on varieties included in previous year's plant-cane maturity study (HoCP 96-540, L 97-128, L 99-233, HoCP00-950 and L 01-283).

⁶ Estimated cane yield is the product of stalk weight and millable stalk counts, estimated sugar yield is the product of TRS and estimated cane yield.